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EXAMINER

MAYES, MELVIN C

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* JEONG IL BYUN,  
KYUNG JOON LEE,  
MYUNG KYU LEE,  
and CHUCKSIN PETER

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Appeal 2008-3850  
Application 10/522,049  
Technology Center 1700

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Decided: October 31, 2008

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Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and KAREN M.  
HASTINGS, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-7. Claim 1 is illustrative:

1. A method for connecting microcircuits comprising:
  - (a) providing an insulating resin solution;

(b) applying the insulating resin solution to each circuit board having circuit patterns;

(c) aligning the circuit boards to face each other so that electrodes of the circuit board face each other, in order to connect the corresponding electrodes of the circuit patterns formed in each circuit board;

(d) positioning an anisotropic conductive adhesive between the circuit boards;

(e) heating the circuit boards; and

(f) applying a predetermined pressure to a side of each circuit board opposite the anisotropic conductive adhesive so that corresponding electrodes are connected to each other;

wherein in the (b) step, said insulating resin solution is formed on a plain portion and a side portion of the circuit patterns and a bottom portion of the circuit board.

The Examiner relies upon the following references as evidence of obviousness:

Anderson	US 5,800,650	Sep. 1, 1998
Fujii	US 2003/0064147 A1	Apr. 3, 2003
Oshimi	JP 2002-179761	Jun. 26, 2002

Appellants' claimed invention is directed to a method for connecting microcircuits. The method involves aligning the electrodes of circuit boards and positioning a conductive adhesive between the circuit boards followed by heating and applying pressure to connect the electrodes of the boards. Also, an insulating resin solution is applied to each circuit board before the boards are aligned.

Appealed claims 1 and 5-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson in view of Fujii. Claims 2-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the stated combination of references further in view of JP '761.

Appellants do not advance an argument that is reasonably specific to any particular claim on appeal. Also, Appellants do not present additional substantive arguments for depending claims 2-4 separately rejected by the Examiner. Accordingly, all the appealed claims stand or fall together and we will limit our consideration to the Examiner's rejection of claim 1.

We have thoroughly reviewed each of Appellants' arguments for patentability. However, we are in complete agreement with the Examiner's reasoned analysis and application of the prior art, as well as his cogent disposition of the arguments raised by Appellants. Accordingly, we will adopt the Examiner's reasoning as our own in sustaining the rejections of record, and we add the following for emphasis only.

There is no dispute that Anderson, like Appellants, discloses a method for connecting microcircuits comprising the claimed steps of aligning the circuit boards so that their electrodes face each other, positioning an anisotropic conductive adhesive between the circuit boards, heating the circuit boards and applying pressure to each side of the boards to connect them. Appellants' sole argument is that Anderson does not provide the claimed insulating resin solution to the circuit boards. Appellants maintain that the dielectric ink coated by Anderson before applying the conductive adhesive is not a resin solution, and one of ordinary skill in the art would not have selected the resin solution of Fujii in the process of Anderson. Appellants contend that the combination of Anderson and Fujii "is improper

because the proposed combination renders Anderson et al. unsatisfactory for its intended purpose" (Br. 5, second para.).

We, like the Examiner, are not persuaded by Appellants' argument. In our opinion, Anderson alone establishes the obviousness of the claimed method. Anderson expressly discloses "[t]he dielectric ink may also be applied using a continuous roll-to-roll process, such as barcoating or spraying" (col. 13, ll. 39-41). Anderson also teaches that the ink is preferably a polyimide and that a wetting agent may be added to the ink, while also teaching that other dielectric materials may be used to form the ink (*see* col. 13, ll. 46-49). Accordingly, when the Anderson disclosure is considered in its entirety, we find that one of ordinary skill in the art would have understood that the dielectric ink of Anderson may be applied to the circuit boards in the form of a resin solution. It was well known in the art at the time of filing the present application that the application processes of barcoating and spraying taught by Anderson involve the coating of a resin solution or dispersion. Indeed, the disclosure of ink in and of itself would have suggested a resin solution. We note that "solution" is a broad term and Appellants have not provided any limiting characteristic to the claimed solution, such as its viscosity or concentration. In our view, Fujii simply underscores the obviousness of applying a resin solution as a coverlayer for a flexible circuit board for the purpose of eliminating undesirable voids in the layer.

We also observe that Appellants have not clarified how the combination of Anderson and Fujii would have rendered Anderson unsatisfactory for its intended purpose. While "Appellants submit that the properties of the dielectric ink are critical to the operation of Anderson et

al." (*id.*), Appellants have not explained which properties would be critically compromised if the ink of Anderson is applied as a resin solution.

Appellants also maintain that if the resin of Fujii was used to modify Anderson, "the result would be inoperable since the heat-cured resin of Fujii et al. would have been heated prior to the joining step" (Br., col. 6, last para.). However, as pointed out by the Examiner, Anderson teaches that the dielectric ink is applied prior to heat-curing, and Appellants have not explained why the resin solution of Fujii would have to be heated prior to its use in the heat joining step of Anderson.

Appellants also contend that using the resin solution of Fujii in the Anderson process would result in the conductive particles of Anderson not penetrating the resin as depicted in Figure 2 of Anderson. However, the Examiner correctly points out that "penetrating the heat-cured cover layer with conductive particles, as argued, is not part of the method of Anderson" (Ans. 9, third para.). As clearly depicted in Anderson's Figure 2, "[t]he conductive particles do not have to penetrate the heat-cured coverlayers to contact the circuit patterns" (*id.*).

As a final point, we note that Appellants base no argument upon objective evidence of nonobviousness, such as unexpected results, which would serve to rebut the inference of obviousness established by the applied prior art.

In conclusion, based on the foregoing and the reasons well stated by the Examiner, the Examiner's decision rejecting the appealed claims is affirmed.

Appeal 2008-3850  
Application 10/522,049

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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